

REMARKS

Claims 1–29 are pending in the application.

Claims 1–29 have been rejected.

Claims 19, 21, 23, 25, 27 and 29 have been amended, as set forth herein, solely to correct errors in claim dependency.

Reconsideration of the claims is respectfully requested.

I. **REJECTION UNDER 35 U.S.C. § 102**

Claims 1–3, 5, 18–19 and 24–25 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,220,629 *Kosaka et al.* The rejection is respectfully traversed.

A prior art reference anticipates the claimed invention under 35 U.S.C. § 102 only if every element of a claimed invention is identically shown in that single reference, arranged as they are in the claims. MPEP § 2131; *In re Bond*, 910 F.2d 831, 832, 15 U.S.P.Q.2d 1566, 1567 (Fed. Cir. 1990). Anticipation is only shown where each and every limitation of the claimed invention is found in a single prior art reference. MPEP § 2131; *In re Donohue*, 766 F.2d 531, 534, 226 U.S.P.Q. 619, 621 (Fed. Cir. 1985).

Independent claims 1, 18 and 24 each recite counting syllables within each word of a text segment. Such a feature is not shown or suggested by the cited reference. *Kosaka et al* teaches counting mora lengths (i.e., utterance speed, where a “mora” is the unit of time equivalent to the ordinary or normal short sound or syllable) representative of syllables within a sentence or word. *Kosaka et al*, column 8, lines 42–45. The morae count is then used to set accent or power during

speech synthesis of various consonant-vowel (CV), vowel-consonant-vowel (VCV), or consonant-vowel-consonant (CVC) phonemes. However, *Kosaka et al* does not teach that mora lengths are fixed by the number of syllables within a phoneme, as argued in the Office Action, but instead teaches that the mora length M for VCV phonemes may be varied within a range. *Kosaka et al*, column 9, line 12 through column 10, line 28. Accordingly, counting morae for a phrase as disclosed in *Kosaka et al* involves measuring a period of time, not counting the number of syllables within that phrase.

Regardless of whether syllables may be determined based on mora, the claims recite determining syllable counts for each word with a subject text segment. *Kosaka et al* contains no teaching or suggestion to count mora length for each individual word, but instead teaches determining a mora length count for the entire word or sentence as a whole. *Kosaka et al*, column 8, lines 42–45. If the mora length is subsequently altered, various changes to vowel and consonant periods are made (e.g., vowel periods are minimized while consonant periods are maximized). However, no determination of mora counts for each individual word within a segment is proposed in *Kosaka et al*.

In addition, independent claims 1, 18 and 24 also recite assigning a playing rate indicator to each word in a segment based on the syllable count for the respective word. Such a feature is not shown or suggested by *Kosaka et al*. Though *Kosaka et al* may arguably suggest altering vowel and consonant periods when the underlying mora length is altered to change the utterance speed, it does

not teach or suggest that the utterance speed for a particular word should be based on the number of syllables within that word.

Claims 2, 19 and 25 each recite that words are generated during speech synthesis according to the individual, syllable count-based playing rate indicators assigned to the respective word. Such a feature is not shown or suggested by the cited reference. *Kosaka et al* teaches that the utterance speed, as defined by mora length M, may be altered for an entire segment, with vowel and consonant periods for select phonemes being adjusted within ranges based on the mora length to improve the “naturalness” of the synthesized speech, but does not teach or suggest employing individual utterance speeds for each word within a segment based on the syllable count for that respective word.

Claim 3 recites that higher playing rates are assigned to words with more syllables while lower playing rates are assigned to words with fewer syllables. Such a feature is not shown or suggested by *Kosaka et al*. *Kosaka et al* only addresses altering utterance speeds based on mora length and whether a vowel or consonant is being synthesized.

Claim 5 recites that the playing rate indicator assigned to a word increases if the syllable count for a word exceeds a threshold. Such a feature is not shown or suggested by the cited reference. *Kosaka et al* teaches that utterance speed (mora length M) may be altered, and that characteristic change points ml and mh may then be employed to change vowel and consonant lengths V and C within a VCV phoneme. *Kosaka et al*, column 9, line 9 through column 10, line 16. However, *Kosaka et al* contains no teaching or suggestion that the mora length M, or the

characteristic change points m_l and m_h , are based on threshold syllable counts for a word being synthesized.

Accordingly, the Applicants respectfully request the Examiner withdraw the Section 102 rejection (over *Kosaka et al*) of Claims 1–3, 5, 18–19 and 24–25.

II. REJECTION UNDER 35 U.S.C. § 103(a)

Claim 4 was rejected under 35 U.S.C. § 103(a) as being unpatentable over *Kosaka et al*. Claims 6–12, 20–21 and 26–27 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,396,577 to *Oikawa et al* in view of U.S. Patent No. 5,146,405 to *Church*. Claims 13–17, 22–23 and 28–29 were rejected under 35 U.S.C. § 103(a) as being unpatentable over *Oikawa et al* in view of U.S. Patent No. 5,924,068 to *Richard et al*. The rejections are respectfully traversed.

In *ex parte* examination of patent applications, the Patent Office bears the burden of establishing a *prima facie* case of obviousness. MPEP § 2142; *In re Fritch*, 972 F.2d 1260, 1262, 23 U.S.P.Q.2d 1780, 1783 (Fed. Cir. 1992). The initial burden of establishing a *prima facie* basis to deny patentability to a claimed invention is always upon the Patent Office. MPEP § 2142; *In re Oetiker*, 977 F.2d 1443, 1445, 24 U.S.P.Q.2d 1443, 1444 (Fed. Cir. 1992); *In re Piasecki*, 745 F.2d 1468, 1472, 223 U.S.P.Q. 785, 788 (Fed. Cir. 1984). Only when a *prima facie* case of obviousness is established does the burden shift to the applicant to produce evidence of nonobviousness. MPEP § 2142; *In re Oetiker*, 977 F.2d 1443, 1445, 24 U.S.P.Q.2d 1443, 1444 (Fed. Cir. 1992); *In re Rijckaert*, 9 F.3d 1531, 1532, 28 U.S.P.Q.2d 1955, 1956 (Fed. Cir. 1993). If the Patent Office does not produce a *prima facie* case of unpatentability, then without more the applicant is entitled to grant

of a patent. *In re Oetiker*, 977 F.2d 1443, 1445, 24 U.S.P.Q.2d 1443, 1444 (Fed. Cir. 1992); *In re Grabiak*, 769 F.2d 729, 733, 226 U.S.P.Q. 870, 873 (Fed. Cir. 1985).

A *prima facie* case of obviousness is established when the teachings of the prior art itself suggest the claimed subject matter to a person of ordinary skill in the art. *In re Bell*, 991 F.2d 781, 783, 26 U.S.P.Q.2d 1529, 1531 (Fed. Cir. 1993). To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed invention and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. MPEP § 2142.

As noted above, independent claim 1, from which claim 4 depends, recites limitations not shown or suggested by *Kosaka et al.* In addition, claim 4 (like claims 8 and 15) recites decreasing the duration of pauses associated with selected punctuation within the text segment being synthesized. Such a feature is not shown or suggested by the cited reference. Pursuant to MPEP § 2144.03, Applicants respectfully traverse the assertion within the Office Action that decreasing the duration of pauses associated with selected punctuation within the text segment being synthesized as recited in claims 4, 8 and 15 was well-known within the relevant art at the time the invention was made, and request citation of a reference or references reflecting such prior art knowledge.

Independent claims 6, 20 and 26 each recite performing a grammatical analysis of the text segment and assigning playing rate indicators to words within the segment based on the grammatical analysis. In an exemplary embodiment, the playing rate indicator of, for example, prepositions may be incremented over the playing rate indicator that would otherwise be assigned to a word having the same number of syllables. Such a feature is not shown or suggested by the cited references. *Oikawa et al* teaches assigning different reading speeds to words depending on an associated importance degree for the respective word (*Oikawa et al*, column 3, line 51 through column 4, line 55), but does not teach or suggest that the importance degree is keyed to the grammatic role of the respective word (i.e., preposition versus article, noun, verb, etc.). *Church* teaches a method for identifying the parts of speech played by various words (nouns versus verbs), and notes that part-of-speech analysis might be useful setting appropriate speech “stress” during synthesis to produce human-sounding speech. *Church*, column 1, lines 14–24. However, neither *Oikawa et al* nor *Church* contain any teaching or suggestion of how to assign an importance degree based on the part-of-speech character for a word. The proposed combination therefore fails to provide any reasonable expectation of success in assigning different reading speeds to particular words based on the part of speech which that word serves.

Independent claims 13, 22 and 28 each recite comparing words within a text segment to a pre-selected inventory of words, and setting a playing rate indicator for respective words based on the results of that comparison. In an exemplary embodiment, certain words determined to be linguistically unimportant such as prepositions and diminutives may be subject to special (e.g.,

higher) playing rate indicators as compared to other words having a similar number of syllables. The pre-selected words, which may include or exclude the linguistically unimportant words, may therefore be either included or excluded from alternative playing rate indicator processes. Such a feature is not shown or suggested by the cited references. As noted above, *Oikawa et al* teaches assigning different reading speeds to words depending on an associated importance degree for the respective word. *Oikawa et al*, column 3, line 51 through column 4, line 55. However, *Oikawa et al* does not teach or suggest that the importance degree is keyed to whether the word is one of a pre-selected inventory. *Richard et al* teaches employing a dictionary look-up table of key codes for compressed transmission of data, and user-controlled changes to the reading speed of selected articles as a whole. *Richard et al*, Abstract. However, *Richard et al* does not teach or suggest that a dictionary be employed to set reading speed for individual words within an article being read, or even that individual words within an article may be read at different speeds. The proposed combination therefore fails to suggest setting playing rate indicators for words within a segment based on comparison of the words with a pre-selected inventory.

Accordingly, the Applicants respectfully request the Examiner withdraw the Section 103(a) rejections (over *Kosaka et al*, *Oikawa et al*, *Church*, and *Richard et al*) of Claims 4, 6–17, 20–23 and 26–29.

III. CONCLUSION

As a result of the foregoing, the Applicant asserts that the remaining Claims in the Application are in condition for allowance, and respectfully requests an early allowance of such Claims.

AMENDMENTS WITH MARKINGS TO SHOW CHANGES MADE

Claims 19, 21, 23, 25, 27 and 29 were amended herein as follows:

1 19. (amended) The computing device of claim [17]18, wherein said process readable instructions
2 further adapt said device to:

3 (iv) generate speech from said text segment such that a playing rate of a generated word
4 is according to said playing rate indicator.

1 21. (amended) The computing device of claim [19]20, wherein said process readable instructions
2 further adapt said device to:

3 (iv) generate speech from said text segment such that a playing rate of a generated word
4 is according to said playing rate indicator.

1 23. (amended) The computing device of claim [21]22, wherein said process readable instructions
2 further adapt said device to:

3 (iv) generate speech from said text segment such that a playing rate of a generated word
4 is according to said playing rate indicator.

1 25. (amended) The computer readable medium of claim [23]24, wherein said computer software
2 further adapts said device to:

3 (d) generate speech from said text segment such that a playing rate of a generated word is
4 according to said playing rate indicator.

1 27. (amended) The computer readable medium of claim [25]26, wherein said computer software
2 further adapts said device to:

3 (d) generate speech from said text segment such that a playing rate of a generated word is
4 according to said playing rate indicator.

1 29. (amended) The computer readable medium of claim [27]28, wherein said computer software
2 further adapts said device to:

3 (d) generate speech from said text segment such that a playing rate of a generated word is
4 according to said playing rate indicator.

ATTORNEY DOCKET No. 10263STUS01U (NORT10-00099)
U.S. SERIAL NO. 09/448,508
PATENT

If any issues arise, or if the Examiner has any suggestions for expediting allowance of this Application, the Applicant respectfully invites the Examiner to contact the undersigned at the telephone number indicated below or at dvenglarik@davismunck.com.

The Commissioner is hereby authorized to charge any additional fees connected with this communication or credit any overpayment to Davis Munck Deposit Account No. 50-0208.

Respectfully submitted,

DAVIS MUNCK, P.C.

Date: 7-22-02



Daniel E. Venglarik
Registration No. 39409

P.O. Drawer 800889
Dallas, Texas 75380
(972) 628-3632 (direct dial)
(972) 628-3600 (main number)
(972) 628-3616 (fax)
E-mail: dvenglarik@davismunck.com